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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/678,183	10/06/2003	David Joseph Kropaczek	24GA5999	2333

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HARNESS, DICKEY & PIERCE, P.L.C.
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RESTON, VA 20195

EXAMINER

PHAN, THAI Q

ART UNIT	PAPER NUMBER
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2128

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/03/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/678,183

Applicant(s)

KROPACZEK ET AL.

Examiner

Thai Phan

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 September 2006.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8,10,11 and 13-16 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-8,10,11 and 13-16 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

This Office Action is in response to applicants' amendment filed on 09/29/2006.

Claims 9 and 12 were cancelled. Claims 1-8, 10, 11, and 13-16 are pending in the Action.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-8, 10, 11, and 13-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chao et al, US patent application publication no. 2004/0196946 in view of Russell et al, US patent no. 6,404,437 B1.

As per claim 1, Chao discloses a method for creating and loading nuclear core fuel pattern with feature limitations very similar to the claimed invention. According to Chao, the method includes selectively assigning using graphical user interface (38) providing a graphical representation of a nuclear reactor core, fuel assembly or bundle, categories or reactivity levels, refinements to fuel bundle positions and to load fuel pattern in the graphical representation ([0008], [0013], [0015], [0029], [0033]). Chao does not disclose "a template" with feature limitation as claimed. Such feature is however well-known in the art. In fact, Russell teaches a method and system for monitoring and visually displaying performance data in nuclear reactor operation. Russell requires an array or template for storing data related to or constraints only to

spatial and temporal information associated with the particular fuel bundle in determining core operation, visualization, core design, loading, and fuel management as taught in cols. 4-6.

This would motivate practitioner in the art at the time of the invention was made to combine or implement the teachings in Russell above into Chao disclosure of nuclear bundle loading and matching to reduce the man-hours in determining core operation, visualization, core design, loading, and fuel management as taught in cols. 5-6.

As per claim 2, Chao discloses a plurality of nuclear fuel types as claimed ([0033]-[0036]).

As per claims 3-4 and 6-8, 10, 11, and 13, Chao discloses the claimed steps as selectively setting fuel assembly or bundle group, amounts of fuels, fuel types (exposed, reinserted, used), finer or coarsen reactivity, setting template fields for loading patterns, or loading positions, etc ([0033]-[0038]).

As per claim 5, Chao discloses quadrants in the graphical representation (Fig. 3, [0032]).

As per claims 14-16, Chao discloses a method for creating and loading nuclear core fuel pattern with feature limitations very similar to the claimed invention. According to Chao, the method and system includes a graphical user interface (38) for selectively assigning fuel reactivity types or bundle group, and providing a graphical representation of a nuclear reactor core, fuel assembly or bundle, categories or reactivity levels, refinements to fuel bundle positions and to load fuel pattern to a desire positions (loading map) in the graphical representation ([0008], [0013], [0015], [0029], [0033]).

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Chao does not disclose "a template" with feature limitation as claimed. Such feature is however well-known in the art. In fact, Russell teaches a method and system for monitoring and visually displaying performance data in nuclear reactor operation. Russell requires an array or template for storing data related to or constraints only to spatial and temporal information associated with the particular fuel bundle in determining core operation, visualization, core design, loading, and fuel management as taught in cols. 4-6.

This would motivate practitioner in the art at the time of the invention was made to combine or implement the teachings in Russell above into Chao disclosure of nuclear bundle loading and matching to reduce the man-hours in determining core operation, visualization, core design, loading, and fuel management as taught in cols. 5-6.

Response to Arguments

Applicant's arguments with respect to the amended claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

1. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US patent no. 4,605,530, issued to Tatemichi, Shinichiro, on Aug. 1986

2. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thai Phan whose telephone number is 571-272-3783. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kamini Shah can be reached on 571-272-2279. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Dec. 26, 2006

Thai Phan
THAI PHAN
PRIMARY EXAMINER
TECHNOLOGY CENTER 2100